

WHAT IS CLAIMED IS:

1. A system for treating cardiac valve regurgitation, comprising:
a delivery catheter;
a treatment device disposed within a lumen of the delivery catheter;
a release mechanism releasably connected to the treatment device;
and
a push tube slidably disposed within the delivery catheter for
applying an axial force to the treatment device.
2. The system of claim 1 wherein the treatment device comprises:
a tubular member including a lumen there through and a locking
mechanism disposed upon an outer surface of the tubular member; and
a compression device carried on the tubular member, wherein the
compression device is transformable to a compression configuration responsive
to application of an axial displacement and is locked in the compression
configuration with the locking mechanism.
3. The system of claim 2 wherein the compression device comprises a
compression member disposed between a first segment and a second segment.
4. The system of claim 3 wherein the compression member comprises
a material selected from the group consisting of nitinol, stainless steel, cobalt-
based alloys, amides, polyimides, polyolefins, polyesters, urethanes,
thermoplastics, thermoset plastics, and blends, laminates or copolymers thereof.
5. The system of claim 3 wherein the first segment and the second
segment each comprise a tubular shape composed of an axially incompressible
material.

6. The system of claim 2 wherein the locking mechanism comprises a stop member spaced apart from at least one lock member along a length of the tubular member.

7. The system of claim 6 wherein the lock member comprises a one-way protrusion lock member.

8. The system of claim 2 wherein the compression device comprises at least one radially extendable compression member.

9. The system of claim 8 wherein the compression member comprises a self-expanding member having a predetermined deployment shape to interface with an interior wall of a vessel.

10. The system of claim 2 wherein the release mechanism comprises a looped tether releasably connected to the tubular member.

11. The system of claim 2 wherein the release mechanism comprises:
a pull tube slidably disposed within the push tube and having at least one latch finger disposed at a distal end of the pull tube; and
a groove at a proximal end of the tubular member for receiving the at least one latch finger,
wherein the at least one latch finger is held in engagement with the groove by the push tube.

12. The system of claim 11 wherein the at least one latch finger is released from the groove by sliding the push tube over the pull tube to expose the at least one latch finger.

13. A device for treating cardiac valve regurgitation, comprising:

a tubular member including a lumen there through and a locking mechanism disposed upon an outer surface of the tubular member; and
a compression device carried on the tubular member, wherein the compression device is transformable to a compression configuration responsive to application of an axial force and is lockable in the compression configuration with the locking mechanism.

14. The device of claim 13 wherein the compression device comprises a compression member disposed between a first segment and a second segment.

15. The device of claim 13 wherein the compression member comprises a material selected from the group consisting of nitinol, stainless steel, cobalt-based alloys, amides, polyimides, polyolefins, polyesters, urethanes, thermoplastics, thermoset plastics, and blends, laminates or copolymers thereof.

16. The device of claim 15 wherein the first segment and the second segment comprise a tubular shape composed of an axial incompressible material.

17. The device of claim 13 wherein the locking mechanism comprises a stop member spaced apart from at least one lock member along a length of the tubular member.

18. The device of claim 17 wherein the lock member comprises a one-way protrusion lock member.

19. The device of claim 13 wherein the compression configuration comprises at least one radially extending portion.

20. The device of claim 13 wherein the compression member comprises a self-expanding member having a predetermined deployment shape to interface with an interior wall of a vessel.

21. The device of claim 13 wherein an outer diameter of the compression device substantially spans an inner diameter of a coronary sinus.

22. A method for treating mitral valve regurgitation, the method comprising:

positioning a compression device within a coronary sinus adjacent a cardiac valve via a delivery catheter;

applying an axial force to the compression device;

transforming the compression device into a compression configuration responsive to the axial force; and

locking the compression device in the compression configuration to apply a compressive force to the cardiac valve.

23. The method of claim 22 wherein transforming the compression device into a compression configuration comprises transforming the compression device into one of a single radial extended portion or a plurality of radial extending portions.

24. The method of claim 22 further comprising:

releasing the compression device from the delivery catheter after the compression device is locked in the compression configuration.